

REMARKS/ARGUMENTS

In the Final Office Action mailed June 2, 2007, claims 1 – 10 were rejected. In response, Applicants propose amending claims 1, 3, 6, 8, and 10, canceling claims 2 and 7, and adding new claims 11 – 15. Applicants respectfully request that the amendments be entered to put the claims in condition for allowance or to put the claims in better condition for Appeal. Applicants hereby requests reconsideration of the application in view of the amended claims, the new claims, and the below-provided remarks.

Claim 1

Claim 1 was rejected under 35 U.S.C. 101 and 102. Applicants propose amending claim 1 to incorporate the limitations of claim 2 and to include the step of “deriving a matching result from the search tree.” Support for the additional step is found in Applicants’ specification (as published in U.S. Pub. No. 2006/0013452 A1) at, for example, paragraphs [0027] lines 2 – 3, [0036] line 1, [0076] lines 1 – 2, and [0081] line 1. As amended claim 1 recites:

“A method of detecting point correspondences between a first set of points and a second set of points, comprising the following steps:
finding of possible matching pairs comprising a point from the first set of points and a point from the second set of points, and
finding a maximum number of matching pairs, wherein the finding of a maximum number of matching pairs comprises the following steps:
combining of two matching pairs at a time into a tuple to form a plurality of tuples,
determining an affine map for each tuple, that maps the two points in each matching pair of the tuple onto one another,
sorting of the plurality of tuples into a tuple list,
creating a search tree on the basis of the tuple list, and
deriving a matching result from the search tree.”

Rejection Under 35 U.S.C. 101

Claims 1 and 2 are rejected under 35 U.S.C. 101 as allegedly being directed to non-statutory subject matter. Applicants assert that claim 1, as amended, is directed to statutory subject matter.

Firstly, Applicants point out that the claimed invention as a whole has utility. Examples of the utility of the claimed invention are disclosed in Applicants’ specification at paragraph [0010]. Paragraph [0010] discloses:

“[0010] The method according to the invention can also be used in a very versatile manner and can be employed wherever two different sets of feature

points have to be examined in a mapping-invariant manner for matches, or in other words have to be matched with one another. Possible areas of application are for example, though not exclusively, the verification and classification of fingerprints using minutiae, the analysis of point correspondences to allow camera parameters to be estimated, the analysis of point correspondences to allow the position and state of images to be recorded, the matching of pass points for the geo-referencing and geo-coding of remote sensing data, or an analysis of point correspondences in 3 D for the recording of the positions and attitudes of three-dimensional objects.” (emphasis added)

In particular, Applicants disclose one utility of the claimed invention as the verification and classification of fingerprints.

Secondly, Applicants point out that the claimed invention falls within the enumerated statutory category of a process because the claim requires one or more acts to be performed. Because the claimed invention has utility and because the claimed invention falls within the enumerated statutory category of a process, Applicants assert that claim 1 is directed to statutory subject matter.

Applicants assert that the claimed invention does not fall within the Judicial Exception of an “Abstract Idea”

The USPTO Official Gazette Notice dated 22 November 2005, “*Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*” (“the OG Notice”) indicates that the analysis under Section 101 should include determining whether a claim covers either a Section 101 Judicial Exception (Law of Nature, Natural Phenomena, or Abstract Idea) or a practical application of a Section 101 Judicial Exception. The Final action presumably alleges that claims 1 and 2 fall within the Judicial Exception of an “Abstract Idea” (although this is not specifically stated) because the Final action states that “the subject matter recited by claims 1 – 4 and 6 – 8 are directed to mathematical algorithm and/or computation.” If a claim falls within one of the Judicial Exception, the subject matter may still be patentable subject matter if the claim covers a practical application of a Judicial Exception. As outlined in the OG Notice, to satisfy Section 101 requirements, the claim must be for a practical application of the Section 101 Judicial Exception, which can be identified if the claimed invention produces a useful, concrete, and tangible result.

Applicants assert that the claimed invention does not fall within the Judicial Exception of an “Abstract Idea” and therefore the “useful, concrete, and tangible result” test is not applicable. The OG Notice identifies a mathematical algorithm as

an example of an Abstract Idea. Applicants assert that the claimed invention is not a mathematical algorithm that simply converts one set of numbers into another set of numbers. Rather, claim 1 recites operations that include “combining of two matching pairs at a time into a tuple,” “determining an affine map,” “sorting...tuples into a tuple list,” “creating a search tree,” and “deriving a matching result.” None of the above-identified steps involves simply converting one set of numbers into another set of numbers. Further, a tuple, a tuple list, an affine map, and a search tree are tangible elements that can be, for example, displayed graphically on a computer screen or printed on a piece of paper. An example of a tuple is illustrated in Fig. 3. Because, the claimed invention does not simply convert one set of numbers to another set of numbers and because the claimed invention recites tangible elements such as a tuple, a tuple list, an affine map, and a search tree, Applicants assert that the claimed invention does not fall within the Judicial Exception of an Abstract Idea and therefore, the “useful, concrete, and tangible result” test is not applicable.

Even if the claimed invention is found to fall within the Judicial Exception of an “Abstract Idea,” the claimed invention produces a useful, concrete, and tangible result

Even if the claimed invention is found to fall within the Judicial Exception of an “Abstract Idea,” Applicants assert that claim 1, as amended, recites subject matter that is a practical application of the Judicial Exception because it produces a useful, concrete, and tangible result. The claimed invention is useful because the matching result enables applications such as fingerprint verification. The claimed invention is concrete because the process will repeatedly produce the same matching result given the same first set of points and the same second set of points. The claimed invention is tangible because the matching result is a real-world result that can be, for example, displayed on a computer screen, provided to a computer to unlock a security feature, or provided to a door lock to unlock the door lock. In sum, even if the claimed invention is found to fall within the Judicial Exception of an “Abstract Idea,” claim 1, as amended, recites subject matter that is a practical application of the Judicial Exception because it produces a useful, concrete, and tangible result.

Claim Rejection Under 35 U.S.C. 102

Claim 1 is rejected under 35 U.S.C. 102 as being anticipated by Ferris et al. (U.S. Pat. No. 5,631,972, hereinafter Ferris). Claim 2 is only rejected under 35

U.S.C. 101. Because claim 1, as amended, incorporates the limitations of claim 2, Applicants assert that claim 1 is not anticipated by Ferris.

Claim 6

Claim 6 has been amended similar to claim 1. In particular, claim 6 has been amended to incorporate the limitations of claim 7 and to include “means for determining a matching result from the search tree.” Claim 6 is rejected under 35 U.S.C. 101 and 102 similar to claim 1. Because of the similarities between claim 1 and claim 6, as amended, Applicants assert that the remarks provided above with respect to claim 1 apply also to claim 6.

Claim 10

Claim 10 has been amended similar to claim 1. In particular, claim 10 has been amended to incorporate the limitations of claim 2 and to include a step of “deriving a matching result from the search tree.” Claim 10 is rejected under 35 U.S.C. 101 and 102 similar to claim 1. Because of the similarities between claim 1 and claim 6, as amended, Applicants assert that the remarks provided above with respect to claim 1 apply also to claim 10.

New Claim 11

New claim 11 includes the limitations of claim 1 and 4 as filed. Claim 4 is rejected under 35 U.S.C. 101 and 102 similar to claim 1. Because of the similarities between claim 1 and claim 11, Applicants assert that the remarks provided above with respect to claim 1 apply also to claim 11. Further, claim 4, as filed, was only rejected under 35 U.S.C. 101. Because new claim 11 incorporates the limitations of claims 1 and 4, as filed, Applicants assert that claim 11 is not anticipated by Ferris.

Claims 12 and 14

Claims 12 and 14 recite “determining that the first set of points corresponds to the second set of points if the matching result is above a presettable threshold value.” Support for these claims is found in Applicants’ specification at, for example, paragraph [0082] lines 1 – 3. Applicants respectfully assert that claims 12 and 14 are patentable over and not anticipated by the cited reference because the cited reference does not disclose the limitations of the claims.

Claims 13 and 15

Claims 13 and 15 recite “using the matching result for biometric identification.” Support for these claims is found in Applicants’ specification at, for example, paragraph [0002] lines 1 – 2. Applicants respectfully assert that claims 13 and 15 are patentable over and not anticipated by the cited reference because the cited reference does not disclose the limitations of the claims.

CONCLUSION

Applicants respectfully request reconsideration of the claims in view of the proposed amendments and the remarks made herein. A notice of allowance is earnestly solicited.

At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account **50-3444** pursuant to 37 C.F.R. 1.25. Additionally, please charge any fees to Deposit Account **50-3444** under 37 C.F.R. 1.16, 1.17, 1.19, 1.20 and 1.21.

Respectfully submitted,

/mark a. wilson/

Date: July 31, 2007

Mark A. Wilson
Reg. No. 43,994

Wilson & Ham
PMB: 348
2530 Berryessa Road
San Jose, CA 95132
Phone: (925) 249-1300
Fax: (925) 249-0111